VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Industrial permit. The effluent limitations contained in this permit will maintain the Surface Water Quality Standards of 9 VAC 25-260. The discharge results from the treatment of industrial wastewater generated at a retail facility selling gasoline and diesel fuel (SIC Code: 5541 – Gasoline Service Stations). This permit action consists of reissuing the permit with revisions to the permit, as needed, due to changes in applicable laws, guidance, and available technical information.

1. Facility Name and Address:
   Flying J Travel Plaza
   333 West Center Street
   North Salt Lake, UT 84054
   Location: 1530 Rest Church Road, Clear Brook, VA 22624

2. Permit No.: VA0089214
   Expiration Date: November 30, 2009

3. Owner Contact: Name: Mr. Gayle J. Smith, P.E.
   Title: Permitting and Compliance Manager
   Telephone No: 801.296.7729

4. Application Complete Date: July 15, 2009

   Permit Drafted By: Trevor H. Wallace Date: 8/20/09
   Reviewed By: Eric R. Millard Date: 8/20/09
   Brandon Kiracofe Date: 9/14/09

   Public Comment Period: 10/1/09 to 10/31/09

5. Annual Permit Maintenance Fee per 9 VAC 25-20-142: $2,040.00
   VPDES Industrial Minor / No Standard Limits
   Highest Permitted Flow: N/A
   TMP? No
   > 5 outfalls? No

6. Receiving Stream Name: Duncan Run
   River Mile: 1.11
   Use Impairment?: None
   Special Standards: pH
   Tidal Waters?: No
   Watershed Name: VAV-B09R – Lower Opequon Creek
   Basin: Potomac; Subbasin: Potomac
   Section: 11; Class: IV

SCANNED
Date
Initials: DH, thw

7. Operator License Requirements per 9 VAC 25-31-200.C: N/A

8. Reliability Class per 9 VAC 25-790: N/A

9. Permit Characterization:
   ☑ Private ☐ Federal ☐ State ☐ POTW ☐ PVOTW
   ☐ Possible Interstate Effect ☐ Interim Limits in Other Document (attach copy of CSO)

10. Description of Treatment Works: **Appendix A**
    Total Number of Outfalls = Existing: 1; Proposed: 0
    Operation and Maintenance (O&M) Manual: Approved on 8/30/06; revisions required to address closure of STP.
    NPDES Permit Rating Worksheet: Score: 20: This facility was previously permitted as a municipal minor. NPDES Permit Rating is not required for municipal dischargers.

11. Discharge Location Description and Receiving Waters Information: **Appendix B**
    Topo Map Number: 223D
    Topo Map Name: Inwood, WV

12. Antidegradation Review (AD) & Comments per 9 VAC 25-260-30:
    Tier Designation: Tier 1

    The State Water Control Board's Water Quality Standards (WQS) includes an AD policy. All state surface waters are provided one of three levels of AD protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The AD policy prohibits new or expanded discharges into exceptional waters.

    The AD review begins with a Tier determination. Duncan Run was previously determined to flow intermittently, having 0 cfs during critical low flow periods. Per DEQ Guidance, intermittent streams are classified as Tier 1. Duncan Run flows into Opequon Creek (Jefferson County, WV), which is listed as impaired for aquatic life uses by the West Virginia DEP. AD baselines are not calculated for Tier 1 waters.

13. Site Inspection: Performed by: Trevor Wallace Date: August 4, 2009

14. Effluent Screening and Effluent Limitations: **Appendix C**

15. Management of Waste Solids:
    Waste solids generated at this facility are periodically disposed by a contracted waste hauler in accordance with the approved O&M Manual.

16. Permit Changes and Bases for Special Conditions: **Appendix D**

17. Material Storage per 9 VAC 25-31-280.B.2: This permit requires that the facility's O&M Manual include information to address the management of wastes, fluids, and pollutants which may be present at the facility, to avoid unauthorized discharge of such materials.

18. Antibacksliding Review per 9 VAC 25-31-220.L: This permit complies with Antibacksliding provisions of the VPDES Permit Regulation. See Appendix C for a discussion of this requirement.

19. Impaired Water Use Status Evaluation per 9 VAC 25-31-220.D: Duncan Run is not listed as impaired. Opequon Creek, which is downstream of Duncan Run, is listed as impaired by the West Virginia DEP. The DEP has not established any effluent restrictions for this facility.

20. Regulation of Users per 9 VAC 25-31-280.B.9: N/A – There are no industrial users other than the owner of the system contributing to the treatment works.

21. Storm Water per 9 VAC 25-31-120: Application Required? ☐ Yes ☑ No

    This facility's SIC Code(s) and activities do not fall within the categories for which a Storm Water Application submittal is required. There are no regulated effluent requirements for storm water that is generated by retail activities.

22. Compliance Schedule per 9 VAC 25-31-250: A 4-year compliance schedule for meeting the new Ammonia-N, Naphthalene, Total Xylene, and MTBE (methyl tert-butyl ether) limits for Outfall 003 is included in the permit.

23. Variances/Alternate Limits or Conditions per 9 VAC 25-31-280.B, 100.J, 100.P, 100.L, and 100 L: None associated with this permit.

24. Financial Assurance Evaluation per 9 VAC 25: N/A – This facility does not treat sewage.

25. Virginia Environmental Excellence Program (VEEP) Evaluation per § 10.1-1187.1-7: At the time of this reissuance, is this facility considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level? ☐ Yes ☑ No

26. Nutrient Trading Regulation per 9 VAC 25-820:
    General Permit Required: ☐ Yes ☑ No

27. Threatened and Endangered (T&E) Species Screening per 9 VAC 25-260-20 B.8: Because this is not a permit issuance or a reissuance that allows for increased discharge flows, T&E screening is not required.

28. Public Notice Information per 9 VAC 25-31-280.B: All pertinent information is on file, and may be inspected and copied by contacting Trevor Wallace at: DEQ-Valley Regional Office, P.O. Box 3000, Harrisonburg, Virginia 22801, Telephone No. (540) 574-7807, trevor.wallace@deq.virginia.gov.

    Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

29. Historical Record: Unless otherwise noted below, no documented substantive changes, such as an increase in design flow or frequency, have occurred at this facility since the permit issuance.
    04/02/96: VPDES Permit Issuance, STP design flow = 0.022 MGD
    11/10/97: CTO for 0.022 MGD STP issued
    11/18/97: Discharge commenced
    06/30/00: OWS Comprehensive Engineering Report approved
    12/01/99: VPDES Permit Revocation & Reissuance for STP design flow = 0.035 MGD
    05/08/01: CTO for 0.035 MGD STP issued
    12/01/04: VPDES Permit Reissuance; STP Design Flow = 0.035 MGD; OWS Average Flow = 0.004 MGD
    02/08/05: Groundwater requirements for STP fully resolved. Consultant assessment of the stream flow characteristics demonstrated Duncan Run is not a sinking stream. No further action required
    2008: STP closed with concurrent connection to municipal sewer collection system

APPENDIX A

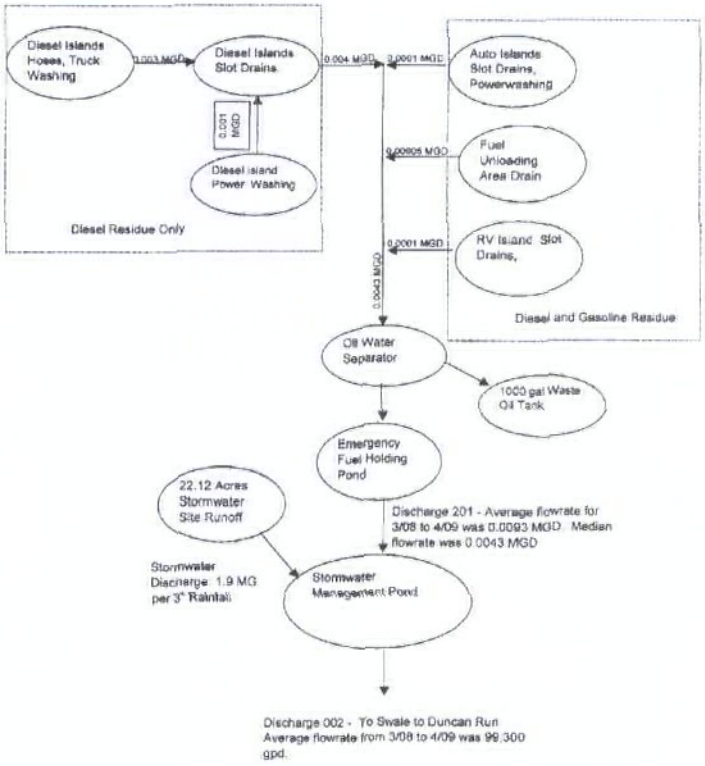
DESCRIPTION OF WASTEWATERS AND TREATMENT FACILITIES

The operations at this facility that generate point source discharges and the treatment provided to those discharges is described below and on the following pages.

Outfall	Operations Contributing Flow	Treatment
001	Historic STP discharge that was removed from service in 2008.	Domestic sewage generated at this facility is discharged to the sewer collection system serving the Opequon WRF (VPDES Permit No. VA0065552)
002	Storm water runoff from the travel plaza roof, fueling island canopies, and parking lot serving the retail facility, as well as the Oil/Water Separator (OWS) plus emergency fuel holding pond discharge via Outfall 003.	Settling. There are no regulated discharge requirements for storm water generated from retail facilities. As such, Outfall 002 will no longer be limited in the permit.
003	**Included in the application, and previously designated in the permit, as Outfall 201.** Process wastewater generated from diesel and gasoline island cleaning, trucking washing by customers, and stormwater collected in the fuel unloading area.	OWS with a rotating belt and stripper design to lift and remove oil which then flows into a 1000 gallon oil holding tank. Oil and waste solids are periodically removed and disposed by a contracted waste hauler.

Flow:
Outfall 003: The long term average flow reported on Form 2C is 0.0093 MGD.

Line Drawing of Water Flows

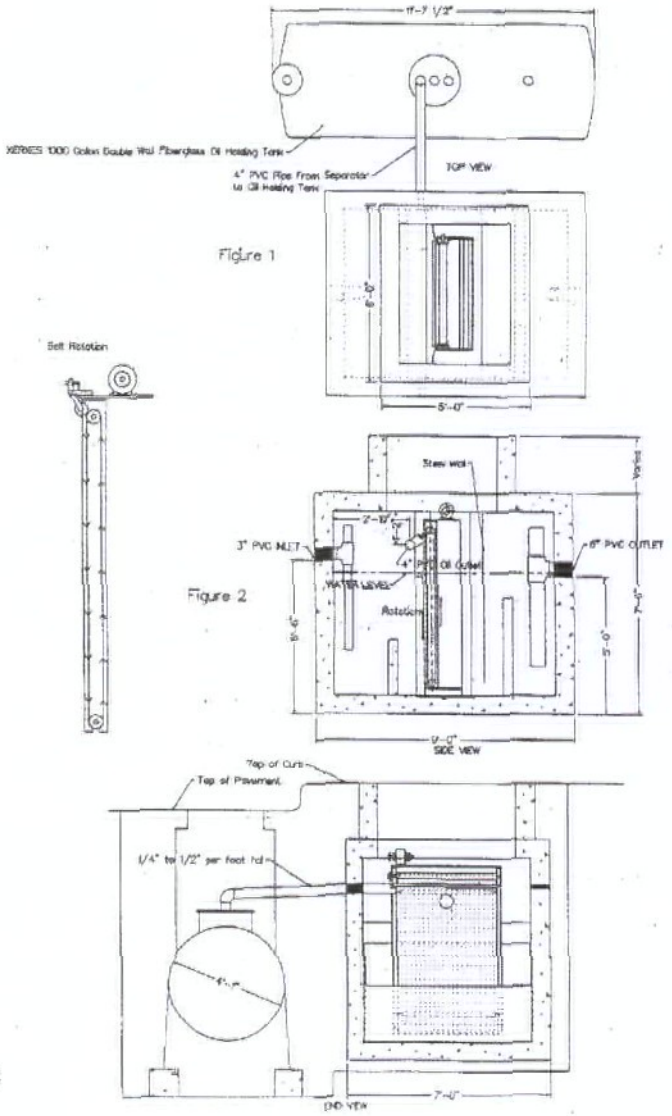


Flying J Travel Plaza
VA0082914

LINE DRAWING

Note: Outfall 201 was renamed Outfall 003 at this reissuance

OWS System



VPDES Permit Rating Work Sheet

Facilities identified under SIC 5541 are not included in Appendix A to the NPDES Permit Rating Work Sheet found in the VPDES Permit Manual.

1987 SIC Code	1987 SIC Code Title	40 CFR 439 Sub-Part	Sub-part Title	Human Health Toxicity Number	Total Toxicity Number	Industrial Sub-category Number
5541	Gasoline Service Stations	NA	NA	NA	NA	NA

Factor 1 – There is no Human Health Toxicity, Total Toxicity or Industrial category number for SIC code 5541.

Factor 2 – Section A, Type II < 1 MGD is selected because the discharge contains process wastewater and the average discharge rate is < 1 MGD.

Factor 3.A. – NA

Factor 3.B. – N/A.

Factor 3.C. – This facility is limited for Ammonia-N.

Factor 4. – There is no Human Health Toxicity, Total Toxicity or Industrial category number for SIC code 5541.

Factor 5.A. – pH limits are based on water quality standards.

Factor 5.B. – The receiving stream is in compliance with applicable water quality standards.

Factor 5.C. – This facility was determined to not exhibit the potential to cause toxicity, and the permit does not include any Toxicity Management Program requirements.

Factor 6. – Proximity to Near Coastal Waters: Headquarters Priority Permit Indicator (HPRI) Code #4 – This discharge occurs in a non-coastal county.

NPDES PERMIT RATING WORK SHEET

[X] Regular Addition
[ ] Discretionary Addition
[ ] Score change, but no status change
[ ] Deletion

NPDES NO. **VA0089214**

Facility Name: **Flying J Travel Plaza**

City: **Clear Brook, VA**

Receiving Water: **Duncan Run**

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?
1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate
[ ] YES; score is 600 (stop here) [X] NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

[ ] YES; score is 700 (stop here)
[X] NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: **5541** Other SIC Codes: _____
Industrial Subcategory Code: **000** (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
[ ] No process waste streams			[ ] 3.	3	15	[ ] 7.	7	35
[ ] 1.	1	5	[ ] 4.	4	20	[ ] 8.	8	40
[ ] 2.	2	10	[ ] 5.	5	25	[ ] 9.	9	45
			[ ] 6.	6	30	[ ] 10.	10	50

Code Number Checked : **N/A**

Total Points Factor 1: 0

FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B; check only one)*

Section A [X] Wastewater Flow Only Considered

Wastewater Type (See Instructions)		Code	Points
Type I: Flow < 5 MGD	[ ]	11	0
Flow 5 to 10 MGD	[ ]	12	10
Flow > 10 to 50 MGD	[ ]	13	20
Flow > 50 MGD	[ ]	14	30
Type II: Flow < 1 MGD	[X]	21	10
Flow 1 to 5 MGD	[ ]	22	20
Flow > 5 to 10 MGD	[ ]	23	30
Flow > 10 MGD	[ ]	24	50
Type III: Flow < 1 MGD	[ ]	31	0
Flow 1 to 5 MGD	[ ]	32	10
Flow > 5 to 10 MGD	[ ]	33	20
Flow > 10 MGD	[ ]	34	3

Section B [ ] Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	[ ]	41	0
	10 % to < 50 %	[ ]	42	10
	> 50 %	[ ]	43	20
Type II:	< 10	[ ]	51	0
	10 % to <50 %	[ ]	52	20
	> 50 %	[ ]	53	30

Code Checked from Section A or B: **21**

Total Points Factor 2: 10

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutant: (check one) [ ] BOD [ ] COD [ ] Other: **N/A**

			Code	Points
Permit Limits: (check one)	[ ]	< 100 lbs/day	1	0
	[ ]	100 to 1000 lbs/day	2	5
	[ ]	> 1000 to 3000 lbs/day	3	15
	[ ]	> 3000 lbs/day	4	20

Code Checked : **N/A**

Points Scored: 0

B. Total Suspended Solids (TSS) **N/A**

			Code	Points
Permit Limits: (check one)	[ ]	< 100 lbs/day	1	0
	[ ]	100 to 1000 lbs/day	2	5
	[ ]	> 1000 to 5000 lbs/day	3	15
	[ ]	> 5000 lbs/day	4	20

Code Checked : **N/A**

Points Scored: 0

C. Nitrogen Pollutant: (check one) [X] Ammonia [ ] Other: **N/A**

		Nitrogen Equivalent	Code	Points
Permit Limits: (check one)	[X]	< 300 lbs/day	1	0
	[ ]	300 to 1000 lbs/day	2	5
	[ ]	> 1000 to 3000 lbs/day	3	15
	[ ]	> 3000 lbs/day	4	20

Code Checked : **1**

Points Scored: 0

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply. **N/A**

[ ] YES (If yes, check toxicity potential number below)

[ ] NO (If no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column [ ] check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
[ ] No process waste streams	0	0	[ ] 3.	3	0	[ ] 7.	7	15
[ ] 1.	1	0	[ ] 4.	4	0	[ ] 8.	8	20
[ ] 2.	2	0	[ ] 5.	5	5	[ ] 9.	9	25
			[ ] 6.	6	10	[ ] 10.	10	30

Code Number Checked : **N/A**

Total Points Factor 4: 0

FACTOR 5: Water Quality Factors

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:

		Code	Points
[X]	Yes	1	10
[ ]	No	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

		Code	Points
[X]	Yes	1	0
[ ]	No	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

		Code	Points
[ ]	Yes	1	10
[X]	No	2	0

Code Number Checked : A 1 B 1 C 2

Total Points Factor 4: A **10** + B **0** + C **0** = **10** TOTAL

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from Factor 2): **21**

Enter the multiplication factor that corresponds to the flow code: **0.10**

Check appropriate facility HPRI Code (from PCS):

	HPRI#	Code	HPRI Score
[ ]	1	1	20
[ ]	2	2	0
[ ]	3	3	30
[X]	4	4	0
[ ]	5	5	20

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI code checked: 4

Base Score: (HPRI Score) **0** x (Multiplication Factor) **0.10** = **0** (TOTAL POINTS)

B. Additional Points --- NEP Program
For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay? **N/A**

	Code	Points
[ ] Yes	1	10
[ ] No	2	0

C. Additional Points --- Great Lakes Area of Concern
For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)? **N/A**

	Code	Points
[ ] Yes	1	10
[ ] No	2	0

Code Number Checked : A 4 B N/A C N/A

Points Factor 6: A **0** + B **0** + C **0** = **0** TOTAL

Score Summary

Factor	Description	Total Points
1	Toxic Pollutant Potential	**0**
2	Flows/Stream Flow Volume	**10**
3	Conventional Pollutants	**0**
4	Public Health Impacts	**0**
5	Water Quality Factors	**10**
6	Proximity to Near Coastal Waters	**0**
	TOTAL (Factors 1-6)	**20**

S1. Is the total score equal to or greater than 80? [ ] Yes (Facility is a major) [X] No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

[X] No

[ ] Yes (Add 500 points to the above score and provide reason below:

Reason: _____

New Score: **20**

Old Score: **N/A**

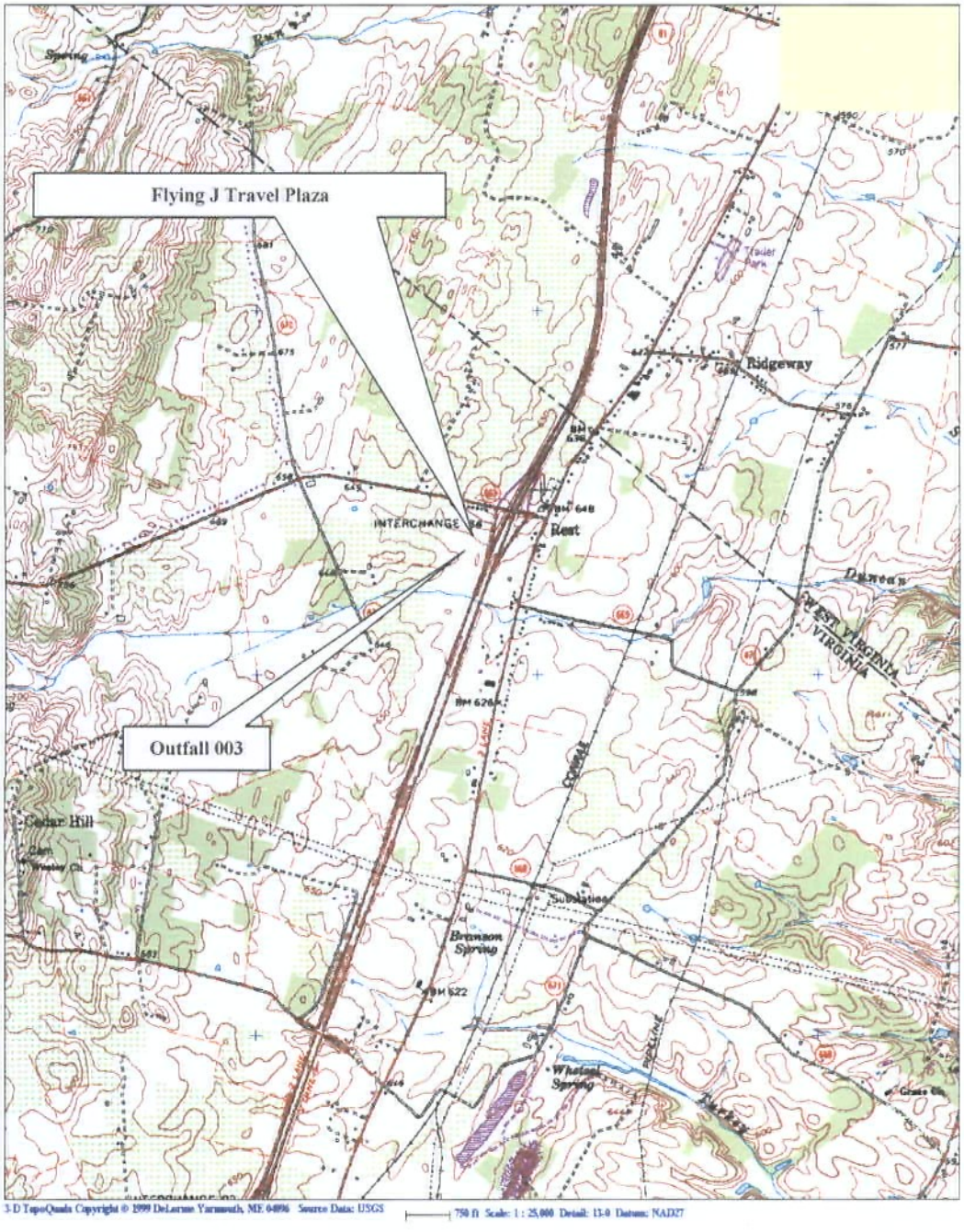
Trevor Wallace
Permit Reviewer's Name
540-574-7807
Phone Number
August 13, 2009
Date

APPENDIX B

DISCHARGE LOCATION DESCRIPTION AND RECEIVING WATERS INFORMATION

DISCHARGE LOCATION

This facility discharges to Duncan Run in Frederick County near Clear Brook, VA. The location of the facility and outfall point are shown on the topographic map below.



DEQ TMDL & PLANNING EVALUATION

Relevant points of interest within the watershed and in the vicinity of the discharge are shown on the enclosed Water Quality Assessment TMDL Review and corresponding map.

WATER QUALITY ASSESSMENTS REVIEW
MIDDLE JAMES RIVER BASIN
7/21/2009

IMPAIRED SEGMENTS

SEGMENT ID	STREAM	SEGMENT START	SEGMENT END	SEGMENT LENGTH	PARAMETER
B09R-02-BAC	Opequon Creek	32.66	23.56	9.1	Fecal Coliform: E-coli
B09R-02-BEN	Opequon Creek	32.66	23.56	9.1	Benthic
B09R-03-BAC	Lick Run	8.85	0.00	8.85	E-coli
B09R-04-BAC	Redbud Run	8.05	0.00	8.05	Fecal Coliform: E-coli
B09R-04-BEN	Redbud Run	8.05	0.00	8.05	Benthic

PERMITS

PERMIT	FACILITY	STREAM	RIVER MILE	LAT	LONG	WBID
VA0089214	Flying J Travel Plaza	Duncan Run	1.11	391712	780517	VAV-B09R
VA0051373	National Fruit-Winchester	Town Run	1.66	391109	781021	VAV-B09R
VA0065552	Opequon Wastewater Reclamation Fac.	Opequon Creek	32.66	391036	780429	VAV-B09R

MONITORING STATIONS

STREAM	NAME	RIVER MILE	RECORD	LAT	LONG
Abrams Creek	1AABR000.78	0.78	08/25/76	391043	0780508
Redbud Run	1ARED000.46	0.46	07/01/91	391113	0780505
Lick Run	1ALIR000.95	0.95	07/01/91	391255	0780502
Opequon Creek	1AOPE025.10	25.1	04/25/79	391443	0780227
Opequon Creek	1AOPE031.26	31.26	7/2003	391138	0780426
Opequon Creek	1AOPE027.30	27.3	7/2003	391328	0780337
Dry Marsh Run	1ADRS000.11	0.11	7/2003	391135	0780409
Opequon Creek	1AOPE029.61	29.61	1984	391215	0780427

PUBLIC WATER SUPPLY INTAKES

OWNER	STREAM	RIVER MILE

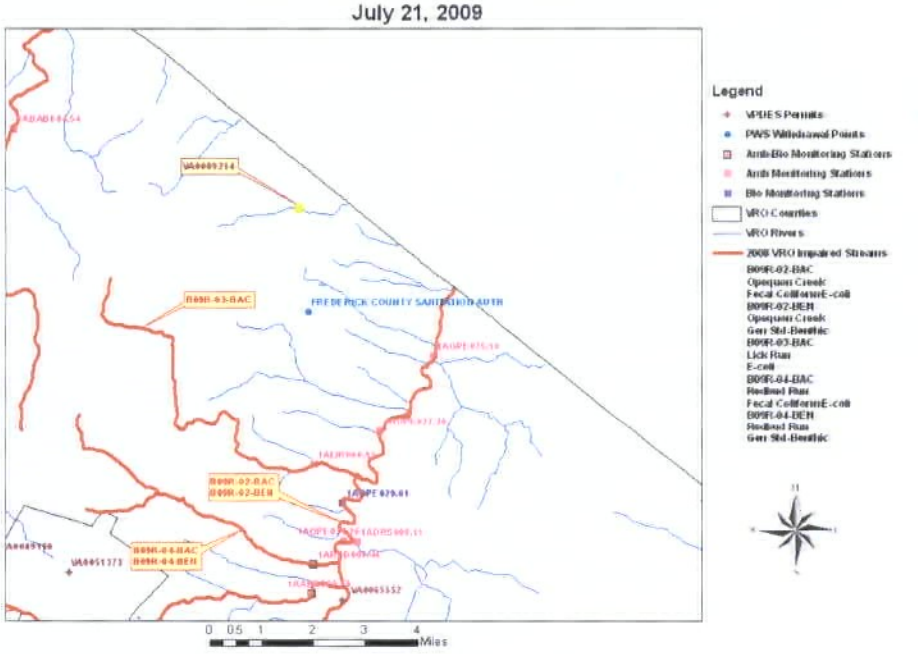
WATER QUALITY MANAGEMENT PLANNING REGULATION

Is this discharge addressed in the WQMP regulation? No
If Yes, what effluent limitations or restrictions does the WQMP regulation impose on this discharge?

PARAMETER	ALLOCATION

WATERSHED NAME
VAV-B09R Lower Opequon Creek

Flying J Travel Plaza - Water Quality Assessments Review
Potomac-Shenandoah River Basin
July 21, 2009



FLOW FREQUENCY DETERMINATION

Duncan Run was documented during previous permit reissuances to flow intermittently. Critical flows for intermittent streams are 0 cfs.

MIXING ZONE EVALUATION

Mixing zone analyses were not conducted at the point of discharge because there is no background flow available for mixing during critical flow conditions.

APPENDIX C

EFFLUENT SCREENING AND EFFLUENT LIMITATIONS

EFFLUENT LIMITATIONS

A comparison of technology and water quality-based limits was performed, and the most stringent limits were selected. The selected limits are summarized in the table below.

Final Limits | Outfall No. 003 | Long Term Average Flow: 0.0093 MGD

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	2	NA	NL	1/Month	Estimate
pH (S.U.)	1,2	6.5	9.5	1/Month	Grab
Benzene (ug/L)[1]	2	NA	50	1/Month	Grab
Toluene (ug/L)[1]	2	NA	175	1/Month	Grab
Ethybenzene (ug/L)[1]	2	NA	320	1/Month	Grab
Total Xylenes (ug/L)	2	NA	33	1/Month	Grab
MTBE (ug/L)[1] (methyl tert-butyl ether)	2	NA	1840	1/Month	Grab
Naphthalene (ug/L)[2]	2	NA	10	1/Month	Grab
TPH (mg/L)[3] (Total Petroleum Hydrocarbons)	2	NA	15	1/Month	Grab
--------	--------	MONTHLY AVERAGE	MAXIMUM	--------	--------
Ammonia-N (mg/L, Annual)	1	0.50	0.50	1/Month	Grab
Ammonia-N (mg/L, Wet Season)	1	0.69	0.69	1/Month	Grab

Note: Sampling for this outfall shall occur at the Spill Retention Pond discharge upstream of the Storm Water Retention Pond.

NL = No Limitation, monitoring required *NA = Not Applicable*

Bases for Effluent Limitations

1. *Water Quality Standards (9 VAC 25-260-5 et seq.).*
2. *9 VAC 25-120: General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Groundwater Remediation and Hydrostatic Tests (GP)*

[1]Benzene, Toluene, Ethylbenzene, Total Xylenes and MTBE shall be analyzed according to a current and appropriate EPA Method (40 CFR Part 136, 2007) or EPA SW 846 Method 8021B (1996).

[2]Naphthalene shall be analyzed by a current and appropriate EPA Wastewater Method from 40 CFR Part 136 (2007) or a current and appropriate EPA SW 846 Method.

[3]TPH shall be analyzed using EPA SW 846 Method 8015C (2007) for diesel range organics, or by EPA SW 846 Method 8270D (2007). If Method 8270D (2007) is used, the lab must report the total of diesel range organics and polynuclear aromatic hydrocarbons.

LIMITING FACTORS – OVERVIEW:

The following potential limiting factors have been considered in developing this permit and fact sheet:

Water Quality Management Plan Regulation (9 VAC 25-720)	
A. TMDL limits	None
B. Non-TMDL WLAs	None
C. CBP (TN & TP) WLAs	None
Federal Effluent Guidelines	None
BPJ/Agency Guidance limits	None
Water Quality-based Limits - numeric	pH, Ammonia-N
Water Quality-based Limits - narrative	None
Toxics Management Plan (TMP)	None
Storm Water Limits	None
VPDES Individual Permit Regulation	None
VPDES General Permit Regulation	Flow, TPH, Naphthalene, Benzene, Toluene, Ethylbenzene, Total Xylene, MTBE (methyl tert-butyl ether), Total Recoverable Lead, Ethylene Dibromide, 1,2 Dichloroethane, Ethanol, pH

EVALUATION OF THE EFFLUENT

OUTFALL 001

This discharge resulted from the operation of an STP that was taken out of service in 2008. Requirements for this outfall are being removed from the permit at this reissuance.

OUTFALL 002

This discharge results from storm water run-off from the plaza retail operations and fueling island canopy drains. No evidence of process wastewater flow leading to Outfall 002 was observed during the August 4, 2009 site visit. Monitoring for Flow, pH, and TPH was required for this discharge in the previous permit. There are no regulated discharge requirements for storm water generated from retail facilities. As such, the effluent requirements included in the previous permit were removed at this reissuance. There shall be no discharge of process wastewater from this outfall.

Effluent monitoring requirements were included in the previous permit based on a BPJ evaluation. Because no limits were previously required, removal of the effluent monitoring requirements complies with the Antibacksliding regulation.

Any unauthorized discharges from the OWS system into the storm water pond feeding Outfall 002 must be reported to DEQ in accordance with Part II of the VPDES Permit.

OUTFALL 003

CONVENTIONAL POLLUTANTS

- Effluent Flow monitoring and pH limitations are included in the permit based on the requirements of 9 VAC 25-120 and 9 VAC 25-260, respectively. These requirements are carried forward from the previous permit.

- Data submitted with the permit application indicates this discharge is not a significant $cBOD_5$ source, and $cBOD_5$ is not limited in the GP. No $cBOD_5$ limits are included in the permit.

- The permittee included data for Color plus Oil and Grease in the application. Neither pollutant appears to be substantially present in the discharge, nor are they limited in the GP. Per Best Professional Judgment, additional monitoring for these parameters is not required by the permit.

- This discharge is not a significant source of nutrients. Nutrient monitoring or limitations are not required.

TOXIC POLLUTANTS

WQS-WLA SPREADSHEET DATA

Stream: The receiving stream is intermittent, carrying only the effluent during critical low flow periods.

Effluent: The pH data was obtained from monitoring results submitted by the permittee. The hardness value is based on data for the Winchester WTP. Since no temperature data were available, the effluent temperature was set based on DEQ guidance.

Effluent Parameter	Value	Units
Mean Hardness (as $CaCO_3$) =	155	mg/L
90th Percentile Temperature (Annual) =	25	°C
90th Percentile Temperature (Wet season*) =	20	°C
90th Percentile Maximum pH =	9.1	SU
10th Percentile Maximum pH =	7.4	SU

* Wet Season = December through May

Water Quality Criteria (WQC) and WLAs were calculated for the WQS parameters for which data is available. Those WQC and WLAs are presented below.

WQS-WLA SPREADSHEET INPUT

WATER QUALITY CRITERIA / WASTE LOAD ALLOCATION ANALYSIS

Facility Name: Flying J Travel Plaza
Receiving Stream: Duncan Run
Permit No.: VA0089214
Date: 8/12/2009
Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information			Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual	- 1Q10 Flow =	100 %	Mean Hardness (as CaCO3) =	155 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD		- 7Q10 Flow =	100 %	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD		- 30Q10 Flow =	100 %	90% Temp (Wet season) =	20 deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season	- 1Q10 Flow =	100 %	90% Maximum pH =	9.1 SU
10% Maximum pH =	SU	30Q10 (Wet season) =	0 MGD		- 30Q10 Flow =	100 %	10% Maximum pH =	7.4 SU
Tier Designation =	1	30Q5 =	0 MGD				Current Discharge Flow =	0.0093 MGD
Public Water Supply (PWS) Y/N? =	N	Harmonic Mean =	0 MGD				Discharge Flow for Limit Analysis =	0.0093 MGD
V(alley) or P(iedmont)? =	V	Annual Average =	0 MGD					
Trout Present Y/N? =	N							
Early Life Stages Present Y/N? =	Y							

Footnotes:
1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise.
2. All flow values are expressed as Million Gallons per Day (MGD).
3. Discharge volumes are highest monthly average or 2C maximum for industries and design flows for Municipals.
4. Hardness expressed as mg/l CaCO3. Standards calculated using Hardness values in the range of 25-400 mg/l CaCO3.
5. "Public Water Supply" protects for fish & water consumption. "Other Surface Waters" protects for fish consumption only.
6. Carcinogen "Y" indicates carcinogenic parameter.
7. Ammonia WQSs selected from separate tables, based on pH and temperature.
8. Metals measured as Dissolved, unless specified otherwise.
9. WLA = Waste Load Allocation (based on standards).
10. WLA = Waste Load Allocation (based on standards).
11. WLAs are based on mass balances (less background, if data exist).
12. Acute - 1 hour avg. concentration not to be exceeded more than 1/3 years.
13. Chronic - 4 day avg. concentration (30 day avg. for Ammonia) not to be exceeded more than 1/3 years.
14. Mass balances employ 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Actual flows employed are a function of the mixing analysis and may be less than the actual critical flows.
15. Effluent Limitations are calculated elsewhere using the minimum WLA and EPA's statistical approach (Technical Support Document).

WQS-WLA SPREADSHEET OUTPUT

Facility Name:	Permit No.:	WATER QUALITY CRITERIA 0.009 MGD Discharge Flow - Mix per "Mixer"				NON-ANTIDEGRADATION WASTE LOAD ALLOCATIONS 0.009 MGD Discharge - Mix per "Mixer"		
Flying J Travel Plaza	VA0089214			Human Health				
Receiving Stream:	Date:	Aquatic Protection		Public Water	Other Surface	Aquatic Protection		Human
Duncan Run	8/12/2009	Acute	Chronic	Supplies	Waters	Acute	Chronic	Health
Toxic Parameter and Form	Carcinogen?							
Ammonia-N (Annual)	N	1.3E+00 mg/L	2.5E-01 mg/L	None	None	1.3E+00 mg/L	2.5E-01 mg/L	N/A
Ammonia-N (Wet season)	N	1.3E+00 mg/L	3.4E-01 mg/L	None	None	1.3E+00 mg/L	3.4E-01 mg/L	N/A
Benzene	Y	None	None	1.2E+01	7.1E+02	N/A	N/A	7.1E+02
Ethylbenzene	N	None	None	3.1E+03	2.9E+04	N/A	N/A	2.9E+04
Toluene	N	None	None	6.8E+03	2.0E+05	N/A	N/A	2.0E+05

PROTOCOL FOR THE EVALUATION OF THE EFFLUENT – TOXIC POLLUTANTS

Toxic pollutants were evaluated in accordance with OWP Guidance Memo No. 00-2011 (8/24/00). According to this guidance, industrial facilities for which a Toxics Management Program is not required are treated as if there are no toxic pollutants in their discharge unless there is actual evidence to indicate otherwise. A Toxics Management Program (TMP) review was performed in accordance with DEQ Guidance, and a TMP is not required for this facility.

Acute and Chronic Waste Load Allocations (WLA_a and WLA_c) were analyzed according to the protocol below using a statistical approach (STAT.exe) to determine the necessity and magnitude of limits. Human Health Waste Load Allocations (WLA_{hh}) were analyzed according to the same protocol through a simple comparison with the effluent data. If the WLA_{hh} exceeded the effluent datum or data mean, no limits were required. If the effluent datum or data mean exceeded the WLA_{hh}, the WLA_{hh} was imposed as the limit. Since there are no data available for any toxic pollutants immediately upstream of this discharge, all upstream background pollutant concentrations are assumed to be "0".

The steps used in evaluating available effluent data are as follows:

A. If all data are reported as "below detection" or < the required Quantification Level (QL) (or, for metals, in a form other than "dissolved"), then the data are not suitable for analysis and no further monitoring is required.

B. If any data value is reported as detectable at or above the required QL, then the data are adequate to determine whether effluent limits are needed.

B.1. If the evaluation indicates that no limits are needed, then no further monitoring is required.

B.2. If the evaluation indicates that limits are needed, then the limits and associated requirements are specified in the draft permit.

Parameter	CASRN	Type	QL (µg/L)	Data (µg/L unless noted otherwise)	Source of Data	Data Eval
Ammonia-N (mg/L)	766-41-7	X	0.2 mg/L	**1.7 mg/L**	a	B.2
Benzene [C]	71-43-2	V	10.0	**<1.0**	a	A
Ethylbenzene	100-41-4	V	10.0	**<1.0**	a	A
Toluene	108-88-3	V	10.0	**<5.0**	a	A

"Type" column indicates a category assigned to the referenced substance (see below):
V = Volatile Organic Compounds
X = Miscellaneous Compounds and Parameters

The **superscript "C"** following the parameter name indicates that the substance is a known or suspected carcinogen; human health criteria at risk level 10^{-5}.

"Source of Data" codes:
a = data included in permit application

"Data Evaluation" codes:
See section titled PROTOCOL FOR THE EVALUATION OF EFFLUENT - TOXIC POLLUTANTS for an explanation of the code used.

CASRN = Chemical Abstract Service Registry Number for each parameter is referenced in the current Water Quality Standards. A unique numeric identifier designating only one substance. The Chemical Abstract Service is a division of the American Chemical Society.

STAT EVALUATION

Facility = Flying J Travel Plaza
Chemical = Ammonia-N, Annual
Chronic averaging period = 30
WLAa = 1.3
WLAc = 0.25
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 1.7
Variance = 1.0404
C.V. = 0.6
97th percentile daily values = 4.13680
97th percentile 4 day average = 2.82844
97th percentile 30 day average= 2.05029
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 0.504417523354078
Average Weekly limit = 0.504417523354078
Average Monthly Limit = 0.504417523354078

The data are: 1.7

Facility = Flying J Travel Plaza
Chemical = Ammonia-N, Wet Season
Chronic averaging period = 30
WLAa = 1.3
WLAc = 0.34
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 1.7
Variance = 1.0404
C.V. = 0.6
97th percentile daily values = 4.13680
97th percentile 4 day average = 2.82844
97th percentile 30 day average= 2.05029
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 0.686007831761546
Average Weekly limit = 0.686007831761546
Average Monthly Limit = 0.686007831761546

The data are: 1.7

WQS toxics effluent data were analyzed per the protocol for evaluation of effluent toxic pollutants with the following results:

- Effluent data for Ammonia-N was submitted with the permit application. The DEQ STAT evaluation is provided in this appendix and demonstrates that limits for Ammonia-N are necessary. Both annual and wet season limits are included in the permit, along with a 4-year schedule of compliance for meeting the new limits.

- Effluent data for Benzene, Ethylbenzene, and Toluene were submitted with the permit application. These data are less than the applicable human health WQC and the maximum effluent limits included 9 VAC 25-120. Aquatic life WQC are not listed for these pollutants. Because this discharge is continuously subject to potential contamination from gasoline, monitoring and limits for Benzene, Ethylbenzene, and Toluene were included in the permit at this reissuance. Data submitted by the permittee indicates this facility is capable of meeting the new limits, and therefore, a schedule of compliance is not necessary.

- Effluent monitoring and a limit for TPH are included in the permit based on the requirements of 9 VAC 25-120. These requirements are carried forward from the previous permit.

- Effluent monitoring and limits for Naphthalene, MTBE, and Total Xylenes are included in the permit based on the requirements of 9 VAC 25-120. This is a new requirement for this facility. There is no indication that the facility can meet the new limits, and as such, a 4-year schedule of compliance is included in the permit.

- Per 9 VAC 25-120, monitoring and limits for Total Recoverable Lead, Ethylene Dibromide, and 1,2 Dichloroethane are only applicable for discharges with the potential for contamination from leaded gasoline. Highway use of leaded gasoline is restricted, and it is not dispensed or stored at this facility.

- Per 9 VAC 25-120, monitoring and limits for Ethanol are applicable for discharges with the potential for contamination by gasoline containing greater than 10% Ethanol. The facility does not dispense or store gasoline containing greater than 10% Ethanol.

- The permittee included data for Surfactants in the application. OWS treatment efficacy is reduced with exposure to surfactants. As such, the permit requires the facility O&M Manual address limiting the use of surfactants, such that OWS performance is not inhibited.

APPENDIX D

PERMIT CHANGES AND BASES FOR SPECIAL CONDITIONS

Tabulated below are the sections of the permit, with any changes and the reasons for the changes identified. Also provided is the basis for each of the permit special conditions.

Cover Page
- Content and format as prescribed by the VPDES Permit Manual.
- The city reference was removed.

Part I.A.1. **Effluent Limitations and Monitoring Requirements: Outfall 003 – Process Wastewater:** Bases for effluent limitations provided in previous pages of this fact sheet. Monitoring requirements are as described in 9 VAC 25-120. *Updates Part I.A.4. of the previous permit with the following:*
- Introduction language was updated, and discharge is now designated as Outfall 003.
- Effluent limitations for Benzene, Toluene, Ethylbenzene, Total Xylenes, MTBE, Naphthalene, and Ammonia-N were included.
- Footnotes were revised to include the facility long term average flow, reference to the permit monitoring and testing requirements in Part I.B., reference to the Schedule of Compliance included in Part I.C., the testing requirements for Benzene, Toluene, Ethylbenzene, Total Xylenes, MTBE, Naphthalene and TPH samples, and the sample location for Outfall 003.

Part I.B. **Schedule of Compliance:** *Updates Part I.C of the previous permit..* 9 VAC 25-31-250 allows for schedules of compliance, when appropriate, which will lead to compliance with the Clean Water Act, the State Water Control Law and regulations promulgated under them.

Part I.C. **Effluent Limitations and Monitoring Requirements – Additional Instructions:** *Updates Part I.D. of the previous permit.* Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

Part I.D.1. **Materials Handling/Storage:** *Identical to Part I.F.3. of the previous permit.* 9 VAC 25-31-280.B.2. requires that the types and quantities of "wastes, fluids, or pollutants which are … treated, stored, etc." be addressed for all permitted facilities.

Part I.D.2. **O&M Manual Requirement:** *Updates Part I.F.4. of the previous permit.* Code of Virginia at 62.1-44.16, VPDES Permit Regulation 9 VAC 25-31-190 E, and 40 CFR 122.41(e) require proper operation and maintenance of the permitted facility. Added a requirement for maintaining a list and copies of applicable Material Safety Data Sheets of all chemicals or chemical products that are stored or provided for customer use at the diesel fueling islands, and a plan for limiting the use of surfactants, such that they will not potentially inhibit the OWS performance. Also added a requirement to describe procedures for documenting compliance with the permit requirement that there shall be no discharge of floating solids or visible foam in other than trace amounts.

Part I.D.3. **Reopeners:**
New Requirement: 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

Part I.D.4. **Notification Levels:** *Identical to Part I.F.11. of the previous permit.* Required by the VPDES Permit Regulation 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.

Part I.D.5. **OWS Influent Restrictions:** *New Requirement.* Restricts the nature of the influent to the OWS to ensure that the chemicals and substances in the wastewater do not compromise the efficacy of the treatment system.

Part II CONDITIONS APPLICABLE TO ALL VPDES PERMITS. VPDES Permit Regulation 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

DELETIONS

Tabulated below are the sections of the previous permit that were deleted and the basis for this action.

Part I.A.1.-2. **Effluent Limitations and Monitoring Requirements: Outfall 001:** *STP Discharge* - The STP was taken out of service in 2008 and a connection made to the municipal sewer collection system.

Part I.A.3. **Effluent Limitations and Monitoring Requirements: Outfall 201 (Interim):** *Process Wastewater* - The final limits for this outfall became effective during the term of the previous permit.

Part I.A.5. **Effluent Limitations and Monitoring Requirements: Outfall 002:** *Storm Water* - There are no regulated discharge requirements for storm water generated from retail facilities.

Part I.B. **Additional TRC Limitations and Monitoring Requirements:** There are no disinfection requirements for this industrial discharge. The STP was taken out of service in 2008 and a connection made to the local municipal sewage collection system.

Part I.E. **Ground Water Monitoring Plan:** Ground water requirements for the STP are fully resolved, no further action is required.

Parts I.F.1.-2. and I.F.5. -10. **95% Capacity Reopener, Indirect Dischargers, CTC/CTO Requirement, Sludge Reopener, SMP Requirement, Licensed Operator Requirement, Reliability Class, & Treatment Works Closure Plan:** Not required for an industrial discharger. The STP was taken out of service in 2008 and a connection made to the municipal sewage collection system.